

What is claimed is:

1. A motor drive circuit for driving an electric motor in an electric compressor, the compressor including a compressor housing that has a circumferential wall around a central axis of the compressor, the circumferential wall having a substantially cylindrical surface, the motor drive circuit comprising:

a substrate arranged outside the circumferential wall, the substrate including a first portion and a second portion, the first portion being closer to the central axis than the second portion; and

a plurality of first electrical components mounted on the substrate on the near side relative to the central axis, the first electrical components including short electrical components that have relatively short height from the substrate and tall electrical components that have relatively tall height from the substrate, wherein the first electrical components line the cylindrical surface of the circumferential wall in such a manner that the short and tall electrical components are respectively arranged at the first and second portions.

2. The motor drive circuit according to claim 1, wherein the first portion is a middle portion of the substrate, the substrate leaving away from the central axis as the substrate extends from the middle portion toward both sides relative to the middle portion, the tall electrical components being arranged on both sides relative to the middle portion.

3. The motor drive circuit according to claim 1, wherein the substrate forms a planar in shape.

5 4. The motor drive circuit according to claim 3, wherein the substrate is substantially in parallel with the central axis.

5. The motor drive circuit according to claim 1, wherein the substrate leaves away from the central axis as the substrate extends from the first portion toward  
10 one side relative to the first portion, the tall electrical components being arranged on the one side relative to the first portion.

6. The motor drive circuit according to claim 1, wherein the substrate is arranged at a predetermined distance from the cylindrical surface of the  
15 circumferential wall, the predetermined distance being shorter than the height of the tall electrical components.

7. The motor drive circuit according to claim 1, wherein the tall electrical components include at least one of an electrolytic condenser and a transformer.

20 8. The motor drive circuit according to claim 1, wherein the short electrical components include a switching device.

9. The motor drive circuit according to claim 1, further comprising:

a second electrical component mounted on the substrate on the far side relative to the central axis, the second electrical component having shorter height than the short electrical components.

10. The motor drive circuit according to claim 9, wherein the second electrical component includes at least one of a driver and a fixed resistance.

11. An electric compressor comprising:

a compressor housing having a circumferential wall around a central axis of the compressor and partially including an accommodating portion that defines an accommodating space along the cylindrical surface, the circumferential wall having a substantially cylindrical surface;

a compression mechanism arranged in the compressor housing for compressing fluid;

an electric motor arranged in the compressor housing for driving the compression mechanism; and

a motor drive circuit arranged in the accommodating space for driving the electric motor, the motor drive circuit including:

a substrate arranged outside the circumferential wall, the substrate including a first portion and a second portion, the first portion

being closer to the central axis than the second portion; and

a plurality of electrical components mounted on the substrate on the near side relative to the central axis, the electrical components including short electrical components having relatively short height from the substrate and tall electrical components having relatively tall height from the substrate, wherein the electrical components line the cylindrical surface of the circumferential wall in such a manner that the short and tall electrical components are respectively arranged at the first and second portions.

12. The electric compressor according to claim 11, wherein the compressor housing defines bottom and side surfaces of the accommodating space.

13. The electric compressor according to claim 12, further comprising:

a first insulating member interposed between the electrical components and the bottom surface of the accommodating space.

14. The electric compressor according to claim 13, wherein the first insulating member is made of material that is selected from the group consisting of rubber and resin.

15. The electric compressor according to claim 14, wherein the first insulating

member has a property of at least one of relatively high elasticity and relatively high heat conductivity.

16. The electric compressor according to claim 12, further comprising:

5 a metal cover member fastened to the compressor housing for defining a top surface of the accommodating space; and

a second insulating member interposed between the top surface and the motor drive circuit.

10 17. The electric compressor according to claim 16, wherein the second insulating member is made of material that is selected from the group consisting of rubber and resin.

18. The electric compressor according to claim 17, wherein the second  
15 insulating member has a property of at least one of relatively high elasticity and relatively high heat conductivity.

19. The electric compressor according to claim 11, wherein the substrate is arranged at a predetermined distance from the cylindrical surface of the  
20 circumferential wall, the predetermined distance being shorter than the height of the tall electrical components.

20. The electric compressor according to claim 11, wherein the compression mechanism is a scroll type.